

**NL/TARACORP SUPERFUND SITE
Sampling Plan for NL/Taracorp Waste Pile**

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE) has requested that Woodward-Clyde prepare a work plan to collect representative samples from the NL/Taracorp waste pile for the purpose of analyzing for the following parameters:

- Total Organic Content
- Total BTU Value per pound
- Specific Density
- Total Lead Content

These analyses would be completed using methodology specified in SW-846 and ASTM.

No analyses have been completed to date to determine total organic content or total BTU value. This information is required for a secondary smelting facility to accept the waste material as smelter feedstock. To be acceptable at a secondary smelting facility, the material must have a total BTU value of less than 5,000, and a total organic content of less than 500 ppm.

Previous evaluations of the NL waste pile by OEHM (1987 and 1994) and O'Brien & Gere (1988-1989) have resulted in a wide variation of estimates of the composition (25 % to 50 % slag) and average density (1.55 to 2.95 tons per cubic yard). The differences may be attributed to exploratory techniques, sample collection methods, and the heterogeneity of the pile due to historical changes in plant processes.

2.0 PROPOSED METHODOLOGY FOR WASTE PILE EVALUATION

2.1 Historical Research / Interviews

A number of things can be done to attempt to better define the history of the pile and what materials were deposited in various parts of the pile at different times. Initially, current plant personnel would be interviewed and to the extent possible historical records searched. Historical maps and airphotos would be obtained to attempt to chronicle the growth of the pile. Based on this information, preliminary estimates of potential stratification and percentages of the types of material in different parts of the pile would be made. This information will then be used to aid in placement of test trenches in strategic parts of the pile.

2.2 Location and Number of Test Pits

Five to six trenches, or approximately one every 100 feet, extending to the base of the pile would be excavated. Detailed logs of the excavation would be made by experienced field personnel. The trenches would be located in all sections of the pile. If, based on the historical research and interviews, critical areas can be identified, trenches will be located in these areas. Otherwise, the trenches will be evenly spaced across the length of the pile.

2.3 Sampling Methodology

Two types of samples will be collected from each trench: 1) representative composite samples with the mix of component materials based on a visual inspection of the trench, and 2) discrete samples of each of the major component materials identified in the trench. Each composite sample will consist of a five (5) gallon bucket of material. This material will be crushed and thoroughly mixed prior to testing. If stratification within the trench is noted, a composite will be collected from each strata. Each discrete sample will consist of sufficient material to perform the required analysis. This is anticipated to be a one quart sample container.

Both types of samples will be collected and tested from each trench.

It is also proposed that a field measure of the density of the pile also be completed. This would be accomplished by weighing a empty dump truck of known volume on the Taracorp truck

scales, filling the truck with excavated material from the pile, and reweighing the truck on the scales. A visual estimate of the amount of void space will be made for each truckload. This estimate of void space will then be figured into the density estimate. This procedure would be repeated for several trenches. The material would then be returned to the pile.

All Excavation and sampling activities would be conducted in Level "C" personal protective equipment. All field activities, including decontamination, documentation and sampling would be conducted in accordance with procedures specified in the Pre-Design Field Investigation Chemical Data Acquisition Plan and Site Safety and Health Plan.

3.0 ANALYTICAL PROCEDURES

Each sample will be tested for Total Organic Carbon (TOC) (SW-846 method 9060), Total BTU Value (ASTM method D-240), Specific Density, and total lead content (SW-846 Method 6010). For the composite samples, each sample will be weighted to reflect the volume of material it represents. Statistical means and standard deviations will then be calculated based on these weighted numbers.

For the discrete samples, the results from each of the component materials will be weighted based on the results of the visual inspection of the trenches. Values for TOC, BTU, and Specific Gravity will then be calculated for the results from each trench based on the weighted percentages. Each sample will be weighted to reflect the volume of material it represents. Statistical means and standard deviations will then be calculated based on these weighted numbers.

Comparisons will then be made between the results from the composite and discrete samples. The difference will be a measure of the degree of uncertainty in the numbers.

4.0 TESTING OF DUST CONTROL MEASURES

The dust control plan for this investigation will effectively be a pilot test for the potential removal or reconfiguration of the pile. The primary dust control measure to be utilized will be wetting down of the excavation area. To monitor the effectiveness of the dust control measures, air monitoring instrumentation will be set up at three mobile locations - two downwind of the

trenching operation and one upwind. The instrumentation to be used will be a Rupprecht & Patashnick Co., Inc. TEOM Series 1400a PM_{10} real time particulate monitors. These monitors will be set up to provide 10 minute PM_{10} averages. The two highest samples measured at the downwind monitors as well as the samples for the matching time period at the upwind monitor will be analyzed for lead in subsequent laboratory analysis.

The ten minute average PM_{10} levels will be compared to the level and type of excavation activity that was taking place concurrently.